In the Claims

Please amend the claims as follows:

We claim:

1-6. (Cancelled).

7. (Original) A method for the catalytic partial oxidation of hydrocarbon fuel comprising:

feeding a feed gas mixture comprising an oxygen containing gas and a hydrocarbon fuel through at least one catalytic partial oxidation reactor disposed in a shell;

reacting the feed gas mixture in the at least one catalytic partial oxidation reactor in the presence of an oxidation catalyst to convert the feed gas mixture to an exit gas mixture of hydrogen and carbon monoxide; and

passing a heat exchange fluid through the shell and past the at least one catalytic partial oxidation reactor with the heat exchange fluid in the shell flowing in the same direction of reactant flow in the catalytic partial oxidation reactor tube such that heat from partial oxidation in the at least one catalytic partial oxidation reactor transfers from the at least one catalytic partial oxidation reactor to the heat exchange fluid in the shell.

8. (Original) A method as in Claim 7, wherein the hydrocarbon fuel is a heavy hydrocarbon fuel.

9. (Original) A method as in Claim 8, wherein said heavy hydrocarbon fuel comprises a plurality of hydrocarbon molecules, with substantially all of said molecules each containing at least 6 carbon atoms.

10. (Original) A method as in Claim 8, wherein said heavy hydrocarbon fuel is selected from the group consisting of gasoline, kerosene, jet fuel, and diesel fuel.

11. (Original) A method as in Claim 7, wherein said oxidation catalyst is a noble metal.

12. (Original) A method as in Claim 7, wherein the partial oxidation reaction is maintained at a temperature greater than about 900°C.

13. (Currently Amended) A method for producing electric power comprising the steps of:

feeding a feed gas mixture comprising an oxygen containing gas and a hydrocarbon fuel through at least one catalytic partial oxidation reactor disposed in a shell;

reacting the feed gas mixture in the at least one catalytic partial oxidation reactor in the presence of an oxidation catalyst to convert the feed gas mixture to an exit gas mixture of hydrogen and carbon monoxide;

passing a heat exchange fluid through the shell and past the at least one catalytic partial oxidation reactor with the heat exchange fluid in the shell flowing in the same direction of reactant flow in the catalytic partial oxidation reactor tube such that heat from partial oxidation in the at least one catalytic partial oxidation reactor transfers from the at least one catalytic partial oxidation reactor to the heat exchange fluid in the shell; and

directing said exit gas mixture to ~~said~~ a solid oxide fuel cell system.

14. (Original) A method as in Claim 13, wherein the hydrocarbon fuel is a heavy hydrocarbon fuel.

15. (Original) A method as in Claim 14, wherein said heavy hydrocarbon fuel comprises a plurality of hydrocarbon molecules, with substantially all of said molecules each containing at least 6 carbon atoms.

16. (Original) A method as in Claim 14, wherein said heavy hydrocarbon fuel is selected from the group consisting of gasoline, kerosene, jet fuel, and diesel fuel.

17. (Original) A method as in Claim 13, wherein said oxidation catalyst is a noble metal.

18. (Original) A method as in Claim 13, wherein the partial oxidation reaction is maintained at a temperature greater than about 900°C.